Vol. 99. Part 5. Pp. 225-242, 3 figs. 25th June, 1948

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THE TRANSACTIONS OF THE ROYAL ENTOMOLOGICAL SOCIETY OF LONDON

World List abbreviation: *Trans. R. ent. Soc. Lond.*

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LONDON
PUBLISHED BY THE SOCIETY AND
SOLD AT ITS ROOMS, 41, QUEEN'S GATE, S.W.7

Price 6s. 0d.

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A SHORT SYNOPSIS OF THE BRITISH SAPROMYZIDAE (DIPTERA)

By J. E. Collin, F.R.E.S.

Manuscript received 20th May, 1947.
(Read 19th November, 1947.)

With 3 Text-figures.

The Sapromyzidae (sometimes called the Lauxaniidae) are Acalyptrate flies, many of which are yellow in colour, possessing the following combination of characters :

No vibrissae ; postvertical bristles well developed, and convergent, situated on occiput behind ocellar triangle ; scutellum normal ; ovipositor of female normal, not Trypetid-like ; legs not particularly long or slender, without very strong bristles, but tibiae with a dorsal preapical bristle, only rarely absent on hind tibiae (*Minettia longipennis* F., and *Sapromyza obsoleta* Fln.) ; wings without a break in costa at end of mediastinal vein or elsewhere ; mediastinal vein distinct, ending in costa ; anal vein short, not extending to wing margin. British species with one exception (the male of *S. albiceps* Fln.) have two widely spaced, reclinate, orbital bristles on each side of frons. A few species have maculated wings.

In 1932 Czerny reviewed the Palaearctic species in Lindner's *Die Fliegen*. He overlooked the fact that the generic name *Lycia* Dsv. (1830) (a name revived by Hendel for a section of the old genus *Sapromyza*) was preoccupied by *Lycia* Hübner (1823). In a later paragraph I deal with the necessity of proposing the new name of *Lyciella* in the place of this homonym. Czerny further accepted without demur the various supposed genera into which the old genus *Sapromyza* had been divided, and added one additional genus (*Prorhaphochaeta*) which he distinguished from *Minettia* Dsv. by the presence of a pair of presutural dorsocentral bristles on thorax, a character which I have discovered from a study of the male genitalia to be unreliable even for distinguishing species. *Prorhaphochaeta* Cz. must therefore disappear as a synonym of *Minettia* Dsv. Among the other genera, *Meiosimyza* Hend. was founded upon the single character of possessing only one sternopleural bristle, but specimens of the only species included (*S. difformis* Lw.= *platycephala* Lw.) occur in which a second sternopleural bristle is distinctly present when they offer no generic distinctions from *Lyciella*. Then *S. albiceps* Fln., upon which Hendel's genus *Paralauxania* was founded, proves to be the male of *S. decaspila* Lw., and thus *Paralauxania* a genus based upon a character present in one sex only of a species of *Sapromyza*. I do not accept either of these two genera. On the other hand, *Cnemacantha* Mcq. (with type *Heteroneura muscaria* Fln.) which Czerny sinks as a synonym of *Lycia* Dsv. (*Lyciella* n.n.) has obvious claims to rank as a distinct genus, owing to the possession of two spurs to middle tibiae, a different type of male genitalia, and markedly different body coloration.

In view of the unreliability of the character of the presutural dorsocentral bristle in *Minettia*, doubts might well arise concerning the validity of the genus *Lyciella*, which is distinguished from *Sapromyza* by the presence of this bristle. At present, however, no case is known in which the position of a species in either genus is doubtful, if the size and position of this particular bristle be noted.

The position of the ocellar bristles in relation to the ocelli appears to be a character of considerable taxonomic importance in this family, and as two of the British species of *Sapromyza* (*S. quadripunctata* L. and *bipunctata* Mg.) differ from the other species and agree with species of *Minettia* and *Peplomyza* in this respect, it would appear advisable to remove them from the genus *Sapromyza*. The generic name of *Sapromyzosoma* Lioy (1864) proposed for *S. tibialis* Mcq.=*quadripunctata* L. is available, and has been adopted.

The SAPROMYZIDAE are shade-loving flies breeding in decaying vegetable matter, including fallen leaves. They do not freely expose themselves to view, and are consequently usually captured by sweeping.

Table of genera of British SAPROMYZIDAE.

1 (2). Head triangular in profile, front of frons very much produced. No strong ocellar bristles. No "presutural" thoracic bristle (a lateral bristle above notopleural depression) . . . . . *Trigonometopus* Mcq.

2 (1). Head of normal shape. Ocellar pair of bristles present.

3 (8). Ocellar pair of bristles placed wider apart, *outside* a line connecting outer edges of front and rear ocelli.

4 (5). Intra-alar bristle present (a lateral bristle situated between the supra-alar and posterior dorsocentral bristles, and in front of the two bristles on postalar callus). Arista subplumose . . . . . *Minettia* Dsv.

5 (4). No intra-alar bristle. Arista only pubescent.

6 (7). Thorax yellow with four dark stripes. Face and frons maculated. Apical part of wings infuscated, the infuscation continued backwards in two streaks, one along radial vein beneath costa, the other along discal vein, to about middle of wing . . . . . *Peplomyza* Hal.

7 (6). Not as above, but yellowish species with most of the characters of *Sapromyza* . . . *Sapromyzosoma* Lioy.

8 (3). Ocellar pair of bristles placed *on* ocellar triangle, behind front ocellus, and *not* outside a line connecting outer edges of front and rear ocelli.

9 (20). Face not so broad or convex, usually yellowish, never shining black in British species. Frontal stripe often very little (or not at all) differentiated from rest of frons from any point of view ; when differentiated it is wide, of considerable width even on each side of ocellar triangle.

10 (13). No strong dorsocentral bristle in front of thoracic suture, and if there is a small one (*S. obsoleta* Fln.) it is nearer to the first strong bristle behind suture than this latter is to the next.

11 (12). The row of small black costal spines terminating before end of cubital vein—*i.e.*, well before tip of wing. Middle tibiae with only one (ventral) spur. No anteroventral row of minute black spines beneath front femora . *Sapromyza* Fln.

12 (11). The row of small black costal spines continued to end of cubital vein. Middle tibiae with a distinct but shorter posteroventral as well as the usual ventral spur. Front femora with an anteroventral row of minute black spines *Homoneura* Wulp.

13 (10). A strong dorsocentral bristle in front of suture.

14 (19). Radial vein (the long vein next to costa ending before wing-tip) bare beneath.

15 (16). Small, blackish species, with strongly infuscated wings, blackish along costa. Middle tibiae with a pair of ventral apical spurs. Six rows of acrostichals on thorax *Cnemacantha* Mcq.

16 (15). Yellow or grey species with wings never strongly infuscated. Middle tibiae with only one apical spur. Acrostichals not more than quadriserial.

17 (18). Hind tarsi of male with a very long, strong, upcurved spine, instead of the outer claw of last joint. Seventh abdominal segment of female long and conical . *Aulogastromyia* Hend.

18 (17). Hind tarsi of male and abdomen of female normal. **Lyciella** n.n. (*Lycia* Desv. *nec* Hübn.)

19 (14). Radial vein setulose on underside. Front femora towards tip with an anteroventral row of minute black spines *Tricholauxania* Hend.

20 (9). Face broader and more convex, shining black. Frontal stripe narrow, not (or very little) wider than ocellar triangle, always differentiated from rest of frons (from at least some points of view) by microscopic dust, or pile. Third antennal joint longer and narrower.

21 (22). First segment of antenna shorter than second *Calliopum* Strand (*Halidayella* Hend. *nec* Dalla Tor.)

22 (21). First segment of antenna as long as or longer than second *Lauxania* Latr.

TRIGONOMETOPUS Macquart.

T. frontalis Mg., the only known Palaearctic species, is not uncommon in situations where Reeds (*Phragmites*) flourish.

MINETTIA Desvoidy.

The type of this genus is *M. nemorosa* Dsv., by designation of Westwood (1840) as "*S. rivosa* Mg.", with the synonymy of *S. rivosa* with Desvoidy's species quoted in a footnote. The designation of *Musca longipennis* F. as type by Hendel in 1908 was therefore invalid. Unfortunately Frey in 1927 accepted Hendel's designation as valid, and believing *longipennis* to be, at least subgenerically, distinct from the

other species (resembling *rivosa* Mg.), proposed a new generic name *Euminettia* for these species, with *Musca lupulina* F. as type. *Euminettia* Frey is thus a synonym of *Minettia*. A new name was, in fact, unnecessary because it would appear to be unreasonable to refuse to accept *Sapromyza tubifer* Mg. (the type of Lioy's genus *Stylocoma*) as a species of *Minettia*, and moreover to accept it as the species known in recent times as *S. trispina* Rdi. and congeneric with *lupulina* F. and *rivosa* Mg. Czerny in Lindner's *Die Fliegen*, LAUXANIIDAE (SAPROMYZIDAE), on p. 2 mentions two species, *S. platycephala* Lw. and *setiventris* Ztt., as having eversible abdominal glands in the female similar to those described by Meigen for his *S. tubifer*, but neither of these species has the arista plumose as in Meigen's species which was captured by Baumhauer at Marseilles. The females of our British *M. trispina* Rdi., which, in my experience, is a species found in coastal localities (or localities where coast-frequenting species are found) also possess these eversible glands, and otherwise answer to Meigen's description. In my opinion these points of agreement are of too great specific importance to make it possible to bring forward any reasonable excuse for refusing to accept the synonymy ; moreover the change of name is made the more acceptable by the fact that the presence of "three spines" is by no means constant in this species.

As *M. longipennis* F. differs from the other British species not only in structure of face but in having the prosternum (between front coxae) entirely bare, Frey may have been correct in considering that it should be regarded as the type of, at least, a subgenus. I have therefore coined the new name **Frendelia**, from a combination of "Frey" and "Hendel," as a new subgeneric name for this species.

A study of the male genitalia has proved that *M. plumicornis* Fln., *tubifer* Mg. (*trispina* Rdi.), and *rivosa* Mg. (hitherto included under *fasciata* Fln.), may, or may not, possess an additional presutural dorsocentral bristle (the character by which Czerny distinguished his genus *Prorhaphochaeta*). In the case of *rivosa* it is often present. This character is therefore quite valueless, even for distinguishing species. A similar study has proved that two preapical bristles may, or may not, be present on middle tibiae in *tubifer* Mg. (*trispina* Rdi.). A failure to realize the possibility of variation in these two characters probably caused Becker to describe his *M. quadrisetosa* from a specimen of *M. plumicornis* Fln., and de Meijere to describe his *M. uncinata* from a specimen of *M. tubifer* Mg.

According to my experience all the British species, with the possible exception of *flaviventris* Costa, may be found during any of the five months May to September

Table of British species of Minettia.

1 (2). Lower part of face with a slight, rounded, swelling on each side. Prosternum entirely bare. No preapical bristle to hind tibiae. Blackish or brownish-black species with base of wing conspicuously blackened. (**Frendelia** subgen. n.) *longipennis* F.

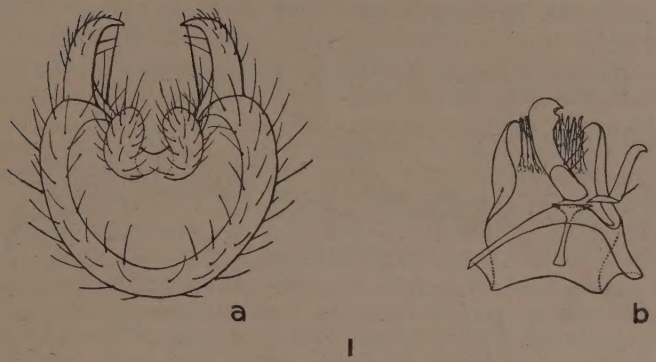

FIG. 1.—*Minettia rivosa* Meigen. (*a*) Hypopygial tergite from above. (*b*) Hypopygial sternite from beneath.

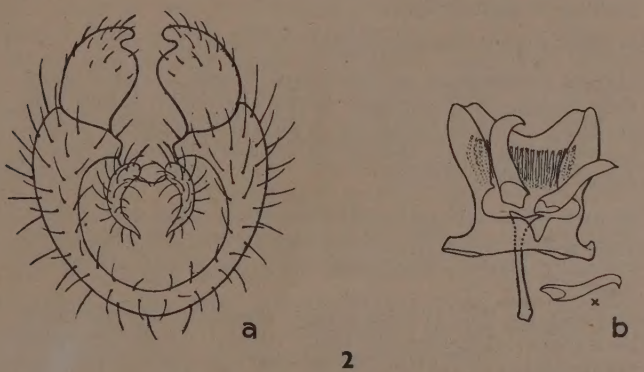

FIG. 2.—*Minettia fasciata* Fln. (*a*) Hypopygial tergite from above. (*b*) Hypopygial sternite from beneath.
X=variation in gonapophysis on right.

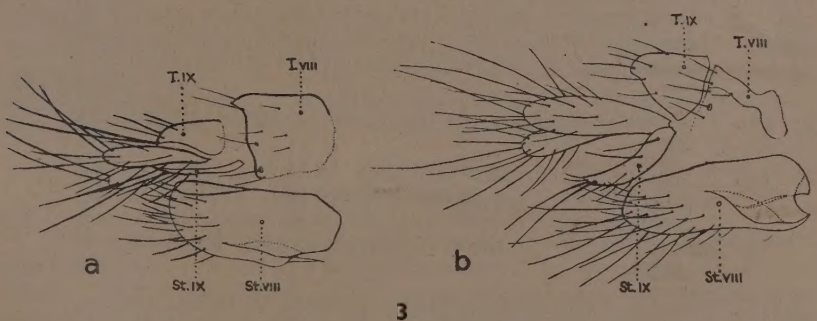

FIG. 3.—(*a*) *Minettia fasciata* Fln. End of female abdomen. (*b*) *Minettia rivosa* Meigen. End of female abdomen.

2 (1). Face normal. Prosternum hairy. Hind tibiae with a preapical bristle . . . . . (*Minettia* sens. strict.)

3 (4). Scutellar hind margin dull black. Blue-grey species with yellowish abdomen and wings . . . . . *lupulina* F.

4 (3). Scutellar hind margin not black.

5 (6). Wings with stigma, costal margin towards tip of wing, and outer cross-vein, darkened ; in very immature specimens only stigma apparently darkened . . . . . *inusta* Mg.

6 (5). Wings clear, not even stigma darkened.

7 (8). Thoracic ground colour distinctly yellowish, even if somewhat obscured by greyish dust. No dark abdominal fasciae. Legs entirely yellow. Female with third (apparent second) abdominal tergite abbreviated and armed with long bristles on hind margin . . . . . *plumicornis* Fln.

8 (7). Thoracic ground colour grey, at most only humeri and scutellar margin yellow.

9 (14). Scutellum with a conspicuously yellow hind margin.

10 (11). Abdomen unicolorous, without dark fasciae or interrupted dark bands. Male genitalia large, with large, broad, side lamellae. Female ovipositor with apical segment deeply channelled beneath. Middle tibiae usually with a pair of dorsal preapical bristles . . *tubifer* Mg. (*trispina* Rdi.)

11 (10). Abdomen with more or less distinct interrupted dark bands. Male genitalia smaller. Female ovipositor not channelled beneath. Middle tibiae with only one dorsal preapical bristle.

12 (13). Male genitalia (fig. 1) with longer, narrower side lamellae, their upper side (nearest anus) ending in an incurved pointed tip, and bearing 1–2 (closely approximated if two) long bristles at base beneath. Female ovipositor (fig. 3, b) with longer hairs on last two sternites than on last tergite *rivosa* Mg.

13 (12). Male genitalia (fig. 2) with shorter, broader, side lamellae, their *lower* side ending in a blunt tip, and without bristle or bristles at base beneath. Female ovipositor (fig. 3, a) with longer hairs on last tergite than on last two sternites *fasciata* Fln.

14 (9). Scutellum unicolorous, without conspicuously yellow hind margin.

15 (16). No presutural dorsocentral bristle on thorax. All antennal joints dusky. Wings not conspicuously yellowish along costal margin. Female with very long, strong bristles on hind margin of third (apparent second) tergite about middle . . . . . *longiseta* Lw.

16 (15). Presutural dorsocentral bristle present. Antennae yellow. Wings conspicuously yellow on costal margin. Female without very long, strong bristles on hind margin of third abdominal tergite . . . . . *flaviventris* Costa

The distribution of the first four species, *M. longipennis* F., *lupulina* F., *inusta* Mg., and *plumicornis* Fln., extends from the south coast of England to the counties of Fife, Perth, Ross, and Inverness, respectively, while the second and fourth species have been taken in Wales.

M. tubifer Mg. (*trispina* Rdi.) can be recorded at present from only Suffolk, Berks, Hants, and Cornwall in England, Glamorgan in Wales, and Co. Kerry in Ireland.

M. rivosa Mg. In 1910 I added *M. subvittata* Lw. to the British List with some doubt as to its correct identification. I now find that though a species closely allied to *fasciata* Fln. occurs in this country, it is not *subvittata* Lw. So far I have not been able to find any reliable characters, except in the genitalia of both sexes, by which to distinguish this species from *fasciata*. Both species would undoubtedly have been identified by Fallén as *Lauxania fasciata*, and by Meigen as *Sapromyza rivosa*, two names published in the same year (1826), and hitherto considered to be synonyms. As neither Fallén nor Meigen ever labelled a specimen as "Type," there is every justification for using Fallén's name of *fasciata* for one of these closely allied species, and Meigen's name of *rivosa* for the other, and I have applied Meigen's name to the species which according to specimens in my Continental Collection is the more common in Central Europe, as indeed it is also in this country. The differences in the genitalia are obvious from the figures, but I would call especial attention, in the figures of the female genitalia, to the more extensively chitinised tergite VIII, and the pair of long bristles on the smaller tergite IX of *fasciata*, compared with the size and chaetotaxy of the corresponding tergites of female *rivosa*. This *M. rivosa* Mg. is the most common and widely distributed species in the genus.

M. fasciata Fln. may prove to be far more widely distributed than my records indicate. I can, at present, record it with certainty only from Norfolk, Suffolk, Cambs, Oxford and Kent.

M. longiseta Lw. has a distribution similar to that of the first four species, and has been taken as far north as the southern bank of the River Spey at Grantown, Inverness-shire.

M. flaviventris Costa was not uncommon, in company with a few *longiseta* Lw., at Dungeness, Kent, in August, 1937, otherwise my only records are of specimens from various localities in Inverness-shire, taken in July and August. *M. luteiventris* Rdi. has been considered a synonym, and I find that a male of *luteiventris* in Bigot's Collection, received from Rondani, is certainly the same as our British *flaviventris*.

PEPLOMYZA Haliday.

This genus is represented in Britain by *P. litura* Mg. (*wiedemanni* Lw.) only. I have seen no British specimen of *P. discoidea* Mg. (*baumhaueri* Lw.), which should be easily recognised by its bare cubital vein, and the position (well above mouth-margin) of the dark spots on face. *P. litura* is not uncommon from June to October in at least the southern half of England, and Ireland.

SAPROMYZOSOMA Lioy.

The two British species should be easily recognised from the following particulars :

S. quadripunctata L.

With only biserial acrostichals between the two rows of dorsocentral bristles on thorax. Hind femora of male with a short row of densely placed black spines just before tip beneath, and hind tibiae with a very dense patch of adpressed black hairs at tip beneath. The part of male genitalia projecting beneath venter longer and narrower than in *bipunctata*, and exhibiting some variation in the shape of its asymmetrical processes ; there is also variation similar to that in *Minettia tubifer* (*trispina* Rdi.) in the number of preapical bristles (one or two) to middle tibiae.

A rather smaller species, and apparently more widely distributed, than *bipunctata* Mg., with records from Devon, Hants, Sussex, Oxford, Suffolk, Cambs, and Essex, in June, July and August.

S. bipunctata Meigen.

Acrostichals quadriserial. Male hind femora and tibiae normal. The anteroventral apical spur to middle tibia (usually very short as for instance in *quadripunctata*) is in this species more developed so that *two* spurs are evident. Male genitalia with remarkable processes curved caliper-like towards each other. In this and the previous species the number of abdominal "spots" proves to be a most unsatisfactory character.

In my experience very local in occurrence, with records from Cambs, Suffolk, and Essex only. It is not uncommon in one locality at Worlington, Suffolk, on the edge of the "Breck" district, in June and July.

SAPROMYZA Fallén.

Table of British species.

1 (2). Frons and face very white, the former usually with only one pair of orbital bristles . . . . . *albiceps* Fln. ♂

2 (1). Frons and face not white, the former with the usual two pairs of orbital bristles.

3 (18). Yellow species.

4 (5). The anterior of the three pairs of dorsocentral bristles very close (almost in) thoracic suture. Third antennal joint and palpi brownish towards tip. Acrostichals at least quadriserial. Fifth abdominal tergite with a pair of large brownish patches and smaller ones on sixth tergite. *albiceps* Fln. ♀ (*decaspila* Lw. syn. nov.)

5 (4). Without above combination of characters.

6 (7). Basal antennal segments darkened. Palpi brownish. Only two pairs of dorsocentral bristles on thorax, and acrostichals in 7–8 rows. Only one sternopleural bristle. . . *basalis* Ztt.

7 (6). Basal antennal segments yellow. At least three pairs of dorsocentral bristles, though sometimes anterior pair small ; rarely a small fourth pair.

8 (13). Third segment of antennae, and palpi, both yellow.

9 (10). Occiput with a darkened patch above neck but not extending to vertex. Anterior of three dorsocentrals very short and fine. Third antennal segment rather large. Acrostichals quadriserial. Fifth and sixth abdominal tergites each with a pair of shining black round spots. *zetterstedti* Hend.

10 (9). Occiput entirely yellow. Fourth, fifth and sixth abdominal tergites with spots.

11 (12). Thorax shining. Aedeagal projection of male genitalia more solid and stouter . . . . . *sexpunctata* Mg.

12 (11). Thorax dull. Aedeagal projection apparently composed of one short black pointed rod, and two much longer yellowish rods . . . . . *opaca* Beck.

13 (8). Third antennal segment more or less, and palpi always, darkened.

14 (17). Occiput all pale. Third antennal segment very black at tip. Front of frons with conspicuous if short black hairs.

15 (16). No preapical bristle to hind tibiae. Usually a small presutural dorsocentral bristle on thorax. Male with tip of hind tibiae beneath and basal segment of hind tarsi beneath very densely clothed with black hairs. Female with no especially strong abdominal hind-marginal bristles *obsoleta* Fln.

16 (15). Hind tibiae with the usual preapical bristle. No presutural dorsocentral bristle. Male hind tibiae and tarsi normal. Female with very strong hind-marginal bristles at sides of third abdominal tergite. . . . *apicalis* (Dsv.), Lw.

17 (14). Occiput with darkened patch above neck. Third antennal segment only brownish towards tip. Front of frons with very inconspicuous short brown hairs. Front femora with a dark patch in front at tip . . . . . *sordida* Hal.

18 (3). Thorax, abdomen and legs blackish. A species more resembling a small *Calliopum* . . . . . *hyalinata* Mg.

S. albiceps Fallén.

A close examination will prove that all specimens hitherto known by this name are males. The hypopygium is small and simple and in immature specimens it is often difficult to decide the sex without dissection, but all specimens with white face and frons and only one pair of orbital bristles will be found to be males. On the other hand, I have never seen a male of *decaspila* Lw. (*octopunctata* v. Ros.). The two supposed distinct species *albiceps* and *decaspila* agree in all characters except colour of face and frons and number of orbital bristles. There can be little doubt that these characters are sexual.

S. basalis Zetterstedt.

A small, very distinct, species, which I have taken at Wormsley Park (Oxford), and on Farley Downs (Hants), in July and August.

S. zetterstedti Hendel.

Previously known as *S. quadrinotata* Zett. [a homonym of *S. quadrinotata* Meq. (1843)] and added to our British List in 1934 from specimens taken in Scotland and Hampshire.

S. scæpunctata Meigen.

Originally recorded from Ireland (but see next species), this species has also been taken in Cornwall, Hereford, Hampshire, and Cambs in July and August.

S. opaca Becker.

Though certainly distinct from the above, this is still a little known species. Col. Yerbury's record of *S. scæpunctata* from Ireland may have been based upon specimens of this species, because one of his specimens in my possession is certainly *opaca*. It is labelled "Staigue Fort 19.7.01." Otherwise it is known to me only from Glamorgan, Cornwall, and Suffolk.

S. obsoleta Fallén.

Probably not uncommon though I can only record it from Kent, Middlesex, Essex, and in my own garden here in Suffolk.

S. apicalis Desvoidy.

This species is usually attributed to Loew, who described a *Sapromyza apicalis* as a new species in 1847, but there is every reason to believe that Desvoidy's *Sylvia apicalis* (1830) was the same species. It is true that Desvoidy's species was considered by Macquart in 1835 to be the same as *S. obsoleta* Fln., and the specimen from Dejean's Collection, separately mentioned by Desvoidy, may well have been that species, but this does not affect the possibility that Desvoidy's own captures were the same as the species described by Loew, and acceptance of this possibility as a fact happily obviates the necessity of dealing with the homonymy of Loew's name.

S. sordida Haliday.

This species was incorrectly sunk as a synonym of *S.* (*Lyciella*) *decipiens* Lw. by Walker. I have examined specimens of *sordida* in Haliday's collection and they agree with his description in having "anticis femoribus apice tarsisque fuscis," this dark patch in front of the front femora, in addition to the fact that the species is a *Sapromyza* and not a *Lyciella*, prove that the synonymy with *Lyciella decipiens* is incorrect. *S. sordida* Hal. has a somewhat shining frons, and acrostichals in six rows, in the male the hind tibiae beneath at tip are clothed with rather dense black hairs, and basal joint of middle tarsi is very densely black haired beneath, especially on basal half; male genitalia very distinctive, side lamellae (or paralobes) curved and sharp pointed with a triangular projection near base behind (nearest anus), ninth sternite (or ventral plate of hypopygium) bearing two very long, slender, pointed, incurved and intercrossing, processes (one on each side); the enormously

large, broad, flat, hollow, aedeagus bears a short, flat, triangularly pointed spine at base on side nearest anus, and the end of each side of aedeagus is produced into a point curving up towards anus. The female is distinct by reason of a peculiar foot-shaped projection from end of last sternite with its "toe" towards anus. Each eye in life bears two faint horizontal bands. It is not at all uncommon from the south of England to at least the Isle of Arran in Scotland from May to September.

S. hyalinata Meigen.

This species was described as, and has for a long time been considered to be, a species of *Lauxania*, mainly because of its general coloration, but it has now been recognised that the structure of its face and frons make it necessary to include it in the genus *Sapromyza*. The synonymy of *L. amica* Hal. is now generally accepted. It has been taken on several occasions in the New Forest (Hants) and was not uncommon in June, 1937, at Kinrara near Aviemore (Inverness-shire). It is a species in which the shape of its male genital appendages is not very constant.

HOMONEURA van der Wulp.

Our British species are said to be congeneric with the type species *H. picea* Wulp from Java. In possessing the character of an anteroventral row of tiny spines beneath front femora they differ from all other British species except *Tricholauxania praeusta* Fln., and *Lyciella rorida* Fln.

Table of British species of Homoneura.

1 (2). Species with quite unmarked wings, not even cross-veins clouded. Arista microscopically pubescent. Three postsutural dorsocentral bristles, front pair very close to thoracic suture . . . . . *consobrina* Ztt.

2 (1). At least cross-veins darkened, or (*notata*) wings with other dark markings.

3 (8). No presutural dorsocentral bristle, but three postsutural bristles.

4 (7). Only cross-veins of wings darkened.

5 (6). Arista only microscopically pubescent. Two middle rows of acrostichal bristles on thorax scarcely stronger than others. Posteroventral spur to middle tibiae very small *interstincta* Fln.

6 (5). Arista almost subplumose. Two middle rows of acrostichals much stronger than others. Posteroventral spur to middle tibiae quite half length of anteroventral one . *tesquae* Beck.

7 (4). Wings with distinct dark patches on end of radial and cubital veins as well as on cross-veins, also 2–8 other round dark spots along radial vein. Palpi yellow. Arista plumose. Male with a posteroventral row of 5–8 distinct black spines on apical part of middle third of hind femora *notata* Fln.

8 (3). A presutural dorsocentral bristle (close in front of thoracic suture) and two postsutural bristles. Arista subplumose. Ends of radial and cubital veins slightly clouded *limnea* Beck.

H. consobrina Zetterstedt.

This species has been taken by me at Kirtling (Cambs) in June, while Col. Yerbury caught a male at Clifford's Castle (Hereford) in July, 1902, and Dr. C. G. Lamb a female near Padstow (Cornwall) in July, 1910. Czerny in 1932 incorrectly indicated that the anterior dorsocentral bristle was in front of thoracic suture. In the male the hind trochanters are triangularly produced downwards, and the last abdominal sternite has two bluntly triangular projections of a whitish yellow colour arising from beneath its hind margin.

H. interstincta Fallén.

Appears to be a rare species. I possess a male taken by myself in Frame Wood, New Forest (Hants), on May 29th, 1939, and a female taken by Mr. L. Parmenter at Limpsfield (Surrey) on June 12th, 1938. Dr. Sharp also found it in the New Forest in July, 1904. My male has a narrow band-like median projection apparently arising from hind margin of last abdominal sternite, with black spinose teeth and a few short bristles at its tip.

H. tesquae Becker.

There may be some doubt about the identification of our British specimens. Becker described the species as having quadriserial acrostichals, but Czerny, in redescribing Becker's type, stated that they were in six rows in front of suture—in agreement with our species. Czerny at the same time described a closely allied species with quadriserial acrostichals as *dentiventris* sp. n. because it had in the male "die beiden letzen Ventrite an den Seiten mit nach hinten gerichteten Zähnen, von denen die vorderen länger sind." Our British species has projections from the hind margin (at sides) of the last two sternites (or ventrites) of the male abdomen ; those from the penultimate sternite are armed at tip with a row of 4–5 short, blunt, black spines, those from the last sternite are more knob-like and bare, but from the base of each of these knobs a chitinised strip extends forward towards base of abdomen, and the tip of each strip is in line with the ends of the projections from penultimate sternite, and is similarly armed with 3–4 black spines. These projections are not easily seen in dried specimens, and may have been present but overlooked in the original type of *tesquae*.

H. notata Fallén.

This species is probably not uncommon though I can record it from only Cornwall, Glamorgan, and Suffolk, taken in June, July, and August. A male in Kowarz's Collection from "Bozen" appears to be a different species, with short stubby spines the whole length of hind femora beneath, and different arrangement of hairs on hind coxae.

H. limnea Becker.

I have not taken this species myself, but it has been found in Glamorgan and Herefordshire in June and July.

CNEMACANTHA Macquart.

The single species *muscaria* Fln. appears to be rare. I possess only a pair taken in Devon (the male in May, the female in August) and two females from Scotland (Perthshire and Dumbarton) taken in July.

AULOGASTROMYIA Hendel.

Both this genus and *Tricholauxania* Hend. show relationship to *Lyciella* in having a few tiny hairs on pteropleura below the infra-squamal ridge. Rondani used the name *fuscicornis* Mcq. for the single species of *Aulogastromyia* which was so well described by Loew as *anisodactyla* in 1845, and by Zetterstedt as *spinitarsis* in 1847. That this was pure guess-work by Rondani may be gathered from a study of Macquart's description, which reads: "Long. 2½ lig. Semblable à la *rorida*. Troisième article des antennes brunâtre. Tarses bruns. Du nord de la France." The synonymy was denied by Loew, and very properly queried and not accepted by Becker and Czerny. I can record *A. anisodactyla* from Dorset, Putney Heath (London), Suffolk and Dumbartonshire, taken in June and July.

LYCIELLA n.n.=*LYCIA* Desvoidy 1830 *nec* Hübner 1823.

The generic name *Lycia* Dsv. adopted by Hendel (1925) with *L. flava* Dsv.=*Sapromyza rorida* Fln. as type, being a homonym of *Lycia* Hübner, cannot be retained for this genus, and it is impossible to believe that *Terenia* Dsv., though considered by Haliday (in Westwood's Generic Synopsis) to be a synonym of *Lycia* Dsv., can be a Sapromyzid genus, when its type species *T. suillorum* Dsv. was stated to be found upon fungi of the genus *Suillus*, in which the larvae fed. No Sapromyzid is known with such habits, which are those of some superficially very similar Helomyzidae. *Sylvia* Dsv. with type *apicalis* Dsv. is a synonym of *Sapromyza*, while *Cnemacantha* Mcq. is a genus distinct from *Lycia* Dsv. The new name of *Lyciella* is therefore proposed in place of *Lycia* Dsv. preoccupied, with type *Sapromyza rorida* Fln.

Table of British species.

1 (2). Front femora with an anteroventral row of tiny spines. Acrostichal bristles on thorax irregularly quadriserial with those of two middle rows longer. Palpi yellow. Third antennal segment slightly brownish at tip. Tarsi yellow. *rorida* Fln.

2 (1). Front femora without this row of spines.

3 (6). Thorax conspicuously dull grey, at least on disc.

4 (5). Frons with two and thorax with four distinct brown stripes. All three antennal segments brownish. Palpi black. Acrostichals at least quadriserial and all short *quadrivittata* Lw.

5 (4). Frons and thorax without stripes; humeri, scutellum and abdomen yellow. Third antennal segment and palpi brownish. Acrostichals quadriserial with those of middle rows longer . . . . . *pallidiventris* Fln.

6 (3). Thorax yellow.

7 (18). Wings not conspicuously maculated, often entirely clear, at most with some costal darkening at tip of wing.

8 (11). Both antennae and palpi entirely yellow. Tarsi yellow. Wings clear.

9 (10). Usually only one sternopleural bristle. Larger species (3·5–4 mm.). Acrostichals obviously only biserial. Male genitalia with paralobes pubescent and not laminar. Female with large eversible sense organ in the membrane at each side of abdomen, and with particularly long, strong bristles on hind margin at sides of fourth tergite. (*Meiosimyza* Hend.) . . *platycephala* Lw. (*difformis* Lw.)

10 (9). Always with two sternopleural bristles, smaller species (2·5–2·75 mm.). Longer axis of eyes more inclined. Arista rather shorter haired. Male genitalia with paralobes bare, shining, and laminar. Female abdomen normal . *laeta* Ztt.

11 (8). Either antennae or palpi, or both, partly black.

12 (13). Antennae yellow but palpi black. Male genitalia peculiar inasmuch that the aedeagus appears to be a projection from the inner side of the last abdominal sternite . *decipiens* Lw.

13 (12). End of third antennal joint darkened, palpi brownish or black.

14 (15). Tarsi darkened, front tarsi particularly black and somewhat stout. Tip of wing with costal margin infuscated. Female with very long hind marginal bristles to fourth abdominal tergite . . . . . *affinis* Ztt.

15 (14). Tarsi at most brownish.

16 (17). Male genitalia with short, broad, truncate paralobes, and (viewed from beneath) with a very long yellow rod on left of aedeagus terminating in a slightly outcurved pointed tip well beyond end of same, and a shorter rod on right with its tip sharply bent toward abdominal venter. Female with the shining, translucent, chitinised, yellow eighth sternite (which overlaps the small ninth sternite) very large and very deeply cleft towards tip, with the base of the slit rounded, not acute. . . . . *illota* Lw.

17 (16). Male genitalia with longer, narrower paralobes either pointed at tip (typical) or blunt-ended (var. **obtusa** var. n.). No rods alongside the conical aedeagus. Chitinised part of female eighth sternite much smaller and not deeply cleft beneath, towards tip . . . . . *subfasciata* Ztt.

18 (7). Conspicuous clouds at ends of veins about tip of wing, and on cross-veins. Basal joint of male hind tarsi thickened at base beneath with a dense patch of adpressed black hairs *decempunctata* Fln.

L. nitidifrons Beck. was introduced as British upon immature specimens of *Tricholauxania praeusta* Fln.

L. rorida Fallén.

A common species in Britain from the South Coast to Sutherland, to be found from June to September inclusive.

L. quadrivittata Fallén.

Originally recorded from Scotland, where it has since been found in various places, it can now be recorded from the English counties of Hants, Oxford, and Norfolk, captured on dates extending from May to August.

L. pallidiventris Fallén.

Is common throughout the summer months from Devon and Cornwall to Nairn. The paralobes of male genitalia are long, gradually tapering to a point, but there appears to be very considerable variation in the length of genital rods.

L. platycephala Loew.

I can record this species from various localities ranging from Dorset and Devon to Tongue on the north coast of Scotland. It is to be found from May to August inclusive.

L. laeta Zetterstedt.

Has only been taken in Scotland. It was not uncommon at Aviemore (Inverness) in June, 1913.

L. decipiens Loew.

Another species with a wide distribution in Britain, having been captured in various localities from the Eastern Counties of England to Nairn in Scotland during the months of May to August.

L. affinis Zetterstedt.

Common in Scotland, but I can also record it from Cumberland, Suffolk, and Cambs. In May, 1908, I bred it from part of a rotten tree-stump brought home from Chippenham Fen (Cambs.).

L. illota Loew.

Any British specimen running down in above table of species to couplet 15 (14) has hitherto been labelled *illota* Lw., whether the tip of wing was slightly clouded, or not. I now find that there are really two (if not three) distinct species included under that name. As is so often the case, these species are only easily recognised by characters in the male genitalia. Unfortunately neither Loew nor Zetterstedt, nor any author who has examined their types, has given any information about the structure of these organs. Pandellé gave details of, and Czerny very briefly mentioned, certain genital characters of the species *recognised by them* as *illota*, and the species for which I use the name *illota* appears to agree with that described by Pandellé under this name; it also answers to Loew's description in having the apical half of third antennal

segment distinctly black, and not brownish, and the tip of wing somewhat infuscated. Czerny's *illota* cannot be the same species because he refers to the genital paralobes as *shining* and *pointed at tip*. His specimens with such paralobes may well be the same as our British *subfasciata* (typical).

My specimens are all from Scottish counties (Dumbarton, Edinburgh, Inverness, and Banff), taken in June and July.

It should be noted that *S. illota* was described by Loew in 1847 from Central European specimens with the Scandinavian *S. praeusta* (Fln.) of Zetterstedt (1838)=*S. affinis* Ztt. (1847), *incorrectly* quoted as a synonym, and Zetterstedt copied this mistake in 1849, placing *illota* Lw. as a synonym of *affinis* Ztt., but these two species are quite distinct.

L. subfasciata Zetterstedt.

I use Zetterstedt's name, with some hesitation, for a British species previously included under the name *illota* Lw. It is abundantly distinct from Loew's species in structure of genitalia, as indicated in the table of species, and the tip of wing is quite clear. It is also a somewhat smaller rather more shining species.

This species is probably not uncommon. I have records from various southern and eastern counties of England, and have seen undoubted males from Scotland. The var. *obtusa* needs further elucidation; females of this var., and even males (in cases where the genitalia are not exposed to view), may easily be passed as specimens of the typical form.

A male specimen, remarkable in possessing only one pair of orbital bristles, was captured at Barton Mills (Suffolk) on June 19th, 1930, a locality where other (normal) specimens have been taken.

L. subfasciata var. **obtusa** var. n.

It appears advisable to call attention to this variety by giving it a name in order that more material may be obtained by those collecting in Scotland. A male was taken at Rannoch (Perthshire) by Mr. Verrall on June 25th, 1870, and a male, with two probable females, at Blacksboat (Elginshire) by Col. Yerbury on July 10th, 1900.

L. decempunctata Fallén.

A very distinct species which is widely distributed in Britain (Wales, England, Scotland), and apparently not uncommon. It has occurred on the windows of my house at Newmarket.

TRICHOLAUXANIA Hendel.

The single species *T. praeusta* Fln. is easily recognised if the setulose underside of the radial vein is not overlooked. It is widely distributed throughout the British Isles and not uncommon.

CALLIOPUM Strand.

It is very doubtful whether the shorter basal antennal segment, the only feature distinguishing species of this genus from *Lauxania* Latr., is of generic value.

Table of British species.

1 (2). Acrostichals between anterior dorsocentral bristles on thorax quadriserial. Male hypopygium very large with extremely long, curved, slender paralobes or side-lamellae. Female with remarkably modified ovipositor . . . *elisae* Mg.

2 (1). Acrostichals between anterior dorsocentrals in six rows.

3 (6). More aeneous-black, less shining, species, with four posterior tibiae conspicuously yellow, and complicated male and female genitalia.

4 (5). Arista rather shorter haired. Male with denser brush of black hairs beneath whole length of middle tarsi. Male genitalia with paralobes more hairy and very blunt at end. Female ovipositor seen from above with last tergite broadly triangular and transversely rugose, the scoop-shaped last sternite squarer at end . . . . . *aeneum* Fln.

5 (4). Arista rather longer haired. Male with normally haired middle tarsi, and genitalia with pointed paralobes less hairy at tip. Female ovipositor with long, narrow, awl-like projection to last tergite, and last sternite more rounded at end . . . . . *simillimum* Coll.

6 (3). Blacker, more shining species with four posterior tibiae only yellowish at tip. Male and female genitalia simple. Paralobes of male genitalia large and globular *geniculatum* (F.) Mg.

C. elisae Meigen.

This species has been taken by me more freely in Scotland (Inverness-shire) than elsewhere, but Col. Yerbury found it at Porthcawl (Glamorgan), and I have taken it in Chippenham Fen (Cambs.) The female has a most remarkable ovipositor with two large, closely approximated, bluntly rounded, tergal, preapical projections.

C. aeneum Fallén and *simillimum* Collin.

Common and widely distributed species. The males may be easily distinguished by the tarsal character mentioned above, and the genital differences were figured in 1933, *Ent. mon. Mag.* **69** : pl. viii. Czerny, in describing the genitalia of *C. aeneum* Fln. in 1932 (Lindner's *Die Fliegen*), appears to have had a specimen of my species *simillimum* before him, and did not include this latter species in his revised "Table of species" given in *Konowia*, 1935.

C. geniculatum (F.) Meigen.

I have taken this species in various localities in Scotland, and it was not uncommon at Worlington (Suffolk) on the edge of the "Breck" district in June, 1935. In British specimens the knees are narrowly yellowish, middle tibiae distinctly, hind tibiae less distinctly yellow at tip, and four posterior tarsi yellowish. In immature specimens the four posterior tibiae may be brownish with yellow tip. From Loew's description our species might well be his *L. nitens*. It is very much like *C. elisae* Mg., but has a more complete and distinct transverse channel across face, smaller male hypopygium, and normal female ovipositor. Head much deeper than long. Male with basal segment of middle tarsi densely black haired beneath, as in *elisae*, and hind tibiae with a dense patch of adpressed black bristles at tip beneath, as in that species.

LAUXANIA Latreille.

The genotype *L. cylindicornis* F. is the only known species of the restricted genus *Lauxania* and is not uncommon. The base of the wing is distinctly blackish, very much as in *Minettia* (*Frendelia*) *longipennis* F.

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